4. The product produced by the process of claim 2.

5. The process of claim 1 wherein the coating is a mono-molecular layer of silicon monoxide.

6. The process of claim 1 wherein the coating is achieved by vacuum depositing a vaporized silicon oxide.

7. The process of claim 1 wherein the combustible material is a cellulosic material.

8. The process of claim 1 wherein the combustible material is a woven or non-woven fabric, paper, or furniture.

9. The process of claim 1 wherein the coating of silicone oxide is deposited as a thin layer ranging from a micron thin layer to a monomolecular layer.

10. A method of imparting fire retardency to a porous material selected from the group consisting of paper and fabric, said method comprising

depositing onto the porous material a silicon oxide layer ranging from a monomolecular layer to a micron thin layer.

11. The process of claim 1 wherein the coating is a micron to monomolecular layer of silicon dioxide.

12. The process of claim 1 wherein the coating of silicon oxide coating is a micro layer of silicon dioxide.

13. The process of claim 1 wherein the coating of silicon oxide coating is a layer of silicon oxide the thickness of a few molecules.

14. A process for making a plywood board, a wafer board or a chip board with a sodium silicate solution comprising combining the sodium silicate solution with wood particles and other materials, and polymerizing the combination.

15. The process of claim 14 wherein the components are impregnated with the sodium silicate, assembled into a board and compressed under heat and pressure to dehydrate the sodium silicate solution and bond the components into the desired board, and polymerized concurrently or subsequently.

16. The process of claim 14 wherein no binder other than sodium silicate is used.

17. The product made by claim 14.

18. The product made by claim 15.

19. The product made by claim 16.

20. The process of claim 14 further comprising vacuum depositing a glassy layer of silicon oxide on said board.

21. The product produced by the process of claim 20.

22. A process for increasing fire resistance of a combustible material comprising:

contacting a porous combustible material with a soluble silicate solution under conditions so as to impregnate pores within the combustible material with said silicate solution;

heat treating said impregnated combustible material at an elevated temperature to dehydrate said silicate solution to form a soluble silicate substance within the pores of said combustible material and further heat treating said soluble silicate within said pores to tend to cause said soluble silicate to become less soluble in water.

23. A process for imparting fire retardency to combustible materials comprising

impregnating said combustible materials with a soluble silicate solution,

polymerizing the soluble silicate within said solution to form a water insoluble silicate based substance;

said polymerizing including the step of dehydrating said silicate solution and heat treating the resulting silicate to form said water insoluble silicate based substance.

24. A process of imparting fire retardant and moisture resistant properties to a cellulosic material comprising applying and infusing a material consisting of an sodium silicate solution, applying energy to said material under sufficient conditions to thereby cause the alkali metal silicate to become water insoluble.

Respectfully submitted,

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